

REMARKS

Rejection of Claims Under 35 USC § 112

Claims 39-58 and 71 have been rejected under 35 USC § 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that, at the time the application was filed, the inventors had possession of the claimed invention.

Specifically, the Examiner contends that the negative limitation "Beta zeolite other than iron-doped Beta zeolite" is not supported by the specification as filed, citing MPEP 2173.05(i) ("Negative Limitations") and *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984).

The Examiner also takes the position (at the top of page 3 of the final action) that the recitation excluding iron-doped Beta zeolite "introduces new concepts." and that the "express exclusion of certain elements implies the permissible inclusion of all other elements not so expressly excluded." The Examiner relies on this contention to state that it illustrates that such negative limitations do, in fact, introduce new concepts.

The Examiner's contention is respectfully traversed. As discussed herein, the iron-doped Beta zeolite is excluded only from a specifically disclosed and claimed limited class of one or more of hydrogen plus catalytic metal moieties. Exclusion of the iron-doped Beta zeolite leaves the claim open only to hydrogen and other catalytic metal moieties within the defined class. Therefore, no new concepts are embraced by the claims.

In the final rejection, the Examiner further states that if Applicants believe that the specification provides support for the recitation considered by the Examiner to constitute new matter, the Applicants are requested to point to the pages and line numbers where such support can be found. Before doing so, it is noted that the Eighth Edition (Rev. Feb 2003) of the MPEP, at Section 2173.05(i), states that the current view of the courts is that there is nothing inherently ambiguous or uncertain about a negative limitation, so long as the boundaries of the patent protection sought are set forth definitely, albeit negatively. Case law is cited in which negative limitations were found to satisfy 35 USC 112. As correctly noted by the Examiner, this section of the MPEP also provides that any negative limitation or exclusionary proviso must have basis in the original disclosure, and further states (in the last paragraph of the left-hand column at page 2100-208)

"If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d

1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also *Ex parte Grasselli...* (Emphasis added.)

With the foregoing admonition in mind, the Examiner's attention is respectfully drawn to Applicants' specification as filed, **page 3, lines 16-20**, which reads as follows.

"Alternatively, or in addition, the zeolite of the catalyst composition may be doped, e.g., ion-exchanged, with a catalytic moiety such as one or more of hydrogen ion, platinum, copper, nickel, cobalt, iron, etc." (Emphasis added.)

The Examiner's attention is also directed to Applicants' specification at **page 13, lines 25-35**, which reads as follows.

"Doped Metals or Hydrogen: The zeolite used may optionally be doped either by conventional acid treatment to convert the zeolite to the acid form or by conventional ion-exchange techniques to exchange catalytically active metal cations for cations of the zeolite, or by any other suitable technique which disposes the catalytic metal or metals or hydrogen within the pores of the zeolite. (Conventional acid treatment of a zeolite to convert it to an acid [hydrogen] form of the zeolite is, for economy of expression, referred to herein as doping the zeolite with hydrogen.)" (Emphasis added.)

It is clear from the foregoing that Applicants' specification at the time of filing clearly delimited the available cations as comprising either hydrogen or "catalytically active metal cations". At least at the portions of pages 3 and 13 cited above, the Applicants' specification as filed positively recited in the specification "hydrogen" and "catalytically active metal cations" as a limited class of components of the claimed composition. It should further be noted that the Applicants' specification, for example, at page 3, lines 16-20 quoted above, states that the zeolite of the catalyst composition may be doped, for example, ion-exchanged, with a catalytic moiety such as one or more of hydrogen ion, platinum, copper, nickel, cobalt, iron, etc. The specification as originally filed thus discloses ion exchange

with one or more such catalytic moieties, therefore providing an explicit basis for omitting one of the specified catalytic moieties.

Differences Between the Present Situation and Ex Parte Grasselli. The foregoing discussion shows that, unlike the situation in *Ex parte Grasselli*, the exclusion of iron as the dopant does not imply the permissible inclusion of all other elements not so expressly excluded. Instead, exclusion of iron simply excludes that one element from the finite group of elements specifically disclosed in the specification and defined in the claims, i.e., the catalytic moiety selected from the group consisting of one or more of hydrogen and catalytically active metal cations. Applicants' claims have been amended to further clarify this point by reciting that the Beta zeolite is doped with a catalytically active moiety selected from hydrogen or catalytically active metal cations other than iron. Omission of iron is explicitly disclosed, as noted above, by the disclosure that only one or more of the catalytic moieties need be used.

In re Johnson. In view of Applicants' specification as filed, including the portions quoted above and the wording of the claims, it is respectfully submitted that the present situation fits within the teachings of *In re Johnson, supra*. As set forth at page 196 in headnotes [10] and [11] of *In re Johnson*, a narrowing of the claims so that the claims embrace only a part of what was disclosed does not bring the claims within the proscription of 35 USC 112. In *In re Johnson*, the claims were narrowed in order to eliminate coverage of a count lost in an interference. In the present case, the claims have been narrowed simply to exclude iron from the limited class of catalytic moieties specifically disclosed in the application and defined in the claims. This is done in order to claim subject matter not claimed in a parent application from which this case was divided. That parent application has issued as U.S. Patent 6,248,684 and claims a catalyst composition comprising iron-doped Beta zeolite.

Claim 43 has been rewritten in independent form. Claim 39 defines a limited class of catalytic moieties, and on that basis alone avoids the rejection under 35 USC 112.

In view of the foregoing, it is respectfully submitted that the rejection of claims under 35 USC 112 has been overcome.

Rejection of claims under 35 USC § 103

Claims 39-54 and 56-58 and 71 have been rejected under 35 USC 103(a) as being unpatentable over Abe '198 (US 5,296,198) in view of Hertl et al (US 5,284,638) and Wan et al (US 4,714,694).

Claims 39-54 and 56-58 have been rejected on the same grounds and with substantially the same discussion as set forth in paragraphs 8-10 of the office action mailed January 2, 2002. In reply thereto, Applicants reaffirm and incorporate herein the comments set forth at pages 4-10 of Applicants' July 1, 2002 response to the January 2, 2002 office action. The incorporated portions of pages 4-10 start with the heading "**Rejection of claims under 35 USC § 103**" at page 4 and end with the penultimate paragraph on page 10 of Applicants' July 1, 2002 response.

In addition thereto, Applicants further comment as follows.

Starting at page 7 of the final rejection, the Examiner responds to arguments previously advanced by the applicants.

The 35 USC 112 issue is believed to have been sufficiently dealt with in the above comments.

With respect to Abe '198, that reference does disclose a catalytic system, but one in which an essential component is an electrically powered heater, as illustrated in Figures 1(a) through 1(f) of the reference. Item 2 in each of those drawings is an electrically operated heater. The Abe '198 heater includes an adsorbent mainly composed of zeolite or an adsorbent-catalyst composition. (Column 2, lines 49 *et seq.*) Although Abe '198 states (column 5, line 17 *et seq.*) that the zeolite used as an adsorbent has no particular restriction with respect to its type, the preferably used adsorbents listed do not include the Beta zeolite which is an essential element of Applicants' claims. Similarly, Hertl '638 discloses the use of zeolites including (column 4, line 40 *et seq.*) a pentasil structure such as ZSM 5 or Beta zeolite in the first temperature-absorbing agent, a second temperature-absorbing comprised of ultra-stable Y zeolite, and a third absorbing agent is preferred to be mordenite.

It is seen from these disclosures that the prior art is very selective in the arrangement and use of particular types of zeolites, and there is really no basis for the Examiner to contend, for example, that the zeolites specifically disclosed in Abe '198 may be in their entirety substituted for the Beta zeolite disclosed in Hertl '638 for a particular specialized (temperature range) use in combination with other types of zeolites. There is no guidance to be found in the references themselves or in the general knowledge of the art to limit the

utilized zeolite to Beta zeolite as required by the Applicants' claims. The efficacy of Beta zeolite and its superiority of performance in the particular environment of treating exhaust gases containing hydrocarbons and a volatile organic fraction, e.g., diesel exhaust, is not discernible from the references or from the general knowledge of the art. It is on this basis that the Applicants contend that the Examiner has indulged in hindsight reasoning in combining and modifying the references to sustain the rejection under 35 USC 103.

Claim 71, which is semi-closed by the "consisting essentially of" language, further patentably distinguishes over the references by excluding the other types of zeolites shown in the art, the heating electrodes of Abe '198, etc.

With respect to claim 71, the Examiner (at page 7 of the final rejection) contends that Applicants have the burden of showing that the introduction of excluded elements would materially change the characteristics of Applicants' composition, citing *In re DeLajarte*, 143 USPQ 256.

In the cited case, after noting that the DeLajarte appellant had the burden of showing the basic or novel characteristics of his insulating glass, the Court points out at the end of the first paragraph of headnote [1] at page 258 of 143 USPQ, that the appellant met his burden simply "by pointing out in his specification and claims the great increase in resistance to perforation resulting from his composition." In headnote [2] at page 259 of 143 USPQ, the Court noted that in the total absence of evidence in the record to indicate that the prior art glass of Lyle would be expected to have desirable electrical insulating properties, no justification could be found for placing the burden on Applicants to conduct experiments, etc. The Court then notes that, although there were only very slight differences between the Lyle composition and that sought to be patented, it could not be assumed that these small differences are incapable of causing a difference in properties.

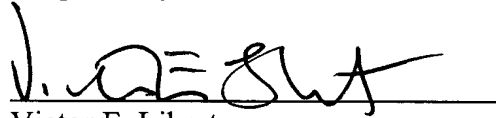
In the present case, Applicants' examples show the superiority of compositions containing Beta zeolite as compared to compositions not containing Beta zeolite. In this regard, see Example 1 at page 19 of Applicants' specification, in particular at page 22, Table IB and the graphic representation of the data in Figures 1-5.

The Examiner's attention is similarly drawn to Example 2 at page 25 and corresponding Figures 6-9, page 32 and page 36, especially Table IV thereof. Each of these cases shows the superiority at least with respect to hydrocarbons conversion of Applicants' claimed compositions as compared to comparative materials outside the scope of the claims. Further, it should be noted that Abe '198 requires the presence of an electrically heated

heater which may comprise a honeycomb monolith optionally containing catalytic components. Aside from compositional differences, it is clear that the presence of the heater would clearly affect the basic and novel characteristics of Applicants' invention which provide for adsorption of hydrocarbons at different temperature levels without the need for electrical heating.

Features of the art relied upon by the Examiner which are excluded by the semi-closed language of claim 71 include as noted above, electrical heating elements of Abe '198, the zeolites other than Beta, as well as other components. As in the DeLajarte case cited by the Examiner, the data presented in Applicants' specification showing the superiority of Beta-containing compositions, and the absence of evidence that the Abe '198 compositions would demonstrate such superiority, satisfy the requirements to show the efficacy of the exclusionary phrase in the rejected claim. Clearly, Abe '198 does not provide the superior hydrocarbon absorption and conversion characteristics of the claimed composition because of, among other factors, the requirement of Abe '198 for the presence of a heater in the catalytic system.

Respectfully submitted,



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